HAYES, SOLOWAY,
IENNESSEY, GROSSMAN
& HAGE, P.C.
175 CANAL STREET
MANCHESTER, NH
03101-2335 U.S.A.

603-668-1400

- 20. Cavity according to claim 19, in which the doping ion is neodymium (Nd).
- 21. Cavity according to claim 19, in which the proportion of the doping ion(s) is 0.1 to 10 moles % for each ion.
- 22. Laser davity according to claim 17, in which the monocrystalline layer of a saturable absorbent material is a YAG doped with one or several doping ions chosen among Chromium (Cr), Erbium (Er), Thulium (Tm), and Holmium (HO) ions.
- 23. Laser cavity according to claim 22, in which the said doping ion is Chromium.
- 24. Cavity according to claim 22, in which the proportion of the doping ion(s) is 1 to 10 moles % for each doping ion.
- 25. Cavity according to claim 17, in which the layer and/or the substrate are (also) doped with at least one (other) doping agent or substitute in order to modify their structural and/or optical properties.
- 26. Cavity according to claim 25, in which the said (other) doping ion is chosen among gallium and inactive rare earths.
- 27. Cavity according to claim 17, in which the thickness of the monocrystalline layer of saturable absorbent material is between 1 and 500 µm.
- 28. Cavity according to claim 17, in which the said monocrystalline layer of saturable absorbent material is a thin layer with a thickness of between 1 and 150 μm .

29. Cavity according to claim 17, which also comprises an entry mirror and an exit mirror, the said entry mirror being directly deposited on the substrate made of a saturable absorbent material.

30. Laser davity according to claim 29, in which the exit mirror is directly deposited on the monocrystalline layer made of a saturable absorbent material.

- 31. Process for the collective production of triggered microlaser cavities with controlled polarization comprising the following steps:
 - a substrate made of a doped or undoped $Y_3Al_5O_{12}$ (YAG) active laser material with a [100] orientation is supplied in the shape of a sheet with parallel faces polished on its two faces;
 - a monocrystalline layer of doped YAG saturable absorbent material is deposited on one of the faces of the said $Y_3Al_5O_{12}$ (YAG) active laser material, by liquid phase epitaxy or by a similar process;
 - the saturable absorbent monocrystalline layer thus deposited is polished;
 - the entry and exit mirrors are deposited on the two polished faces of the cavity;
 - the substrate monocrystalline layer mirrors complex thus obtained is cut out.
 - 32. Triggered laser with controlled polarization comprising a cavity like the cavity according to claim 17, and pumping means for this cavity.

Chal

HAYES, SOLOWAY,
HENNESSEY, GROSSMAN
& HAGE, P.C.
175 CANAL STREET
MANCHESTER, NH
03101-2335 U.S.A.

603-668-1400